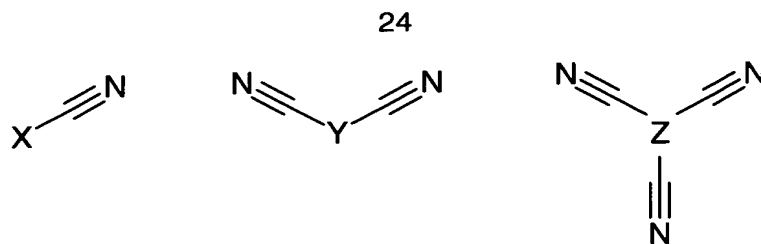


Claims

- 5 1. A process for hydrogenating nitrile functions present in organic compounds over at least one heterogeneous catalyst, wherein the hydrogenation is carried out in the presence of an ionic liquid.
- 10 2. A process according to claim 1, wherein a nonpolar ionic liquid is used in the case of a heterogeneous catalyst having a polar surface and a polar ionic liquid is used in the case of a heterogeneous catalyst having a nonpolar surface and/or ionic liquid and catalyst are chosen so that starting material or product reside in a different phase and/or irreversible occupation of the catalyst is prevented by the ionic liquid.
- 15 3. A process according to claim 1 or 2, wherein the ionic liquid has a melting point below 200°C.
- 20 4. A process according to any of claims 1 to 3 carried out in the absence of ammonia.
- 25 5. A process according to any of claims 1 to 4, wherein the ionic liquid contains ammonium and/or phosphonium ions and/or at least one five- or six-membered heterocycle which contains at least one phosphorus or nitrogen atom and, if appropriate, a sulfur and/or oxygen atom.
- 30 6. A process according to any of claims 1 to 5, wherein, in the case of a suspension process, the catalyst and/or the ionic liquid are recirculated separately or together to the process or, in the case of a fixed-bed process, the ionic liquid is recirculated to the process.
- 35 7. A process according to any of claims 1 to 6, wherein a heterogeneous catalyst based on nickel, cobalt, copper, iron, ruthenium, rhodium, iridium, palladium and/or platinum is used, if appropriate as a skeletal catalyst.
- 40 8. A process according to any of claims 1 to 7, wherein the hydrogenation is carried out at a temperature of from 20 to 250°C and/or a pressure of from 1 to 300 bar.
9. A process according to any of claims 1 to 8, wherein the nitriles to be hydrogenated have at least one of the following structural units:



where X in the structural units is a linear, branched or cyclic group selected from the group consisting of alkyl, cycloalkyl, alkenyl, alkynyl, aryl, hydroxyalkyl, alkoxyalkyl, aminoalkyl and C₁₋₄-aryl.

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10. The use of ionic liquids in hydrogenations of nitrile functions present in organic compounds over at least one heterogeneous catalyst.

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